

**Long Comment Regarding a Proposed Exemption
Under 17 U.S.C. 1201
(Proposed Class #20)**

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Item 1. Commenter Information

This Comment is submitted on behalf of Entertainment Software Association; Motion Picture Association of America, Inc.; and Recording Industry Association of America (collectively the “Joint Creators and Copyright Owners”). The Joint Creators and Copyright Owners may be contacted through their counsel, Steven J. Metalitz, J. Matthew Williams and Naomi Straus, Mitchell Silberberg & Knupp LLP, 1818 N St., NW, 8th Fl., Washington, D.C., 20036, Telephone (202) 355-7900.

The Joint Creators and Copyright Owners are trade associations representing some of the most creative and innovative companies in the United States.

The Entertainment Software Association (“ESA”) represents all of the major platform providers and nearly all of the major video game publishers in the United States. ESA is the U.S. association exclusively dedicated to serving the business and public affairs needs of companies that publish computer and video games for video game consoles, handheld devices, personal computers, and the Internet. ESA offers a range of services to interactive entertainment software publishers, including but not limited to: a global content protection program; business and consumer research; government relations; and intellectual property protection efforts.

The Motion Picture Association of America, Inc. (“MPAA”) is the voice of one of the country’s strongest and most vibrant industries – the American motion picture, home video and television industry. MPAA works to advance the business and the art of filmmaking and to celebrate its enjoyment around the world. MPAA members include: Walt Disney Studios Motion Pictures; Paramount Pictures Corporation; Sony Pictures Entertainment Inc.; Twentieth Century Fox Film Corporation; Universal City Studios LLC; and Warner Bros. Entertainment Inc.

The Recording Industry Association of America (“RIAA”) is the trade organization that supports and promotes the creative and financial vitality of the major music companies. Its members comprise the most vibrant record industry in the world. RIAA members create, manufacture and/or distribute approximately 85% of all legitimate recorded music produced and sold in the United States. In support of its mission, the RIAA works to protect the intellectual property and First Amendment rights of artists and music labels; conduct consumer, industry and technical research; and monitor and review state and federal laws, regulations and policies.

Item 2. Proposed Class Addressed

Proposed Class 20: Jailbreaking—Smart TVs.

The December 12, 2014 Notice of Proposed Rulemaking (“NPRM”) described this proposed class as permitting “the jailbreaking of computer-embedded televisions (‘smart TVs’).¹ Asserted noninfringing uses include accessing lawfully acquired media on external devices, installing user-supplied licensed applications, enabling the operating system to interoperate with local networks and external peripherals, and enabling interoperability with external devices, and improving the TV’s accessibility features (e.g., for hearing impaired users).” 79 Fed. Reg. 73,856, 73,867 (Dec. 12, 2014). None of the proponents of this exemption proposed language identifying a class of works for the Register to recommend. This should weigh against granting any exemption related to smart TVs.

Item 3. Overview

The Joint Creators and Copyright Owners oppose this exemption. This proposal should be rejected because circumvention related to smart TVs would increase piracy of applications designed for use on smart TVs while also threatening other copyrighted materials such as feature films and televisions shows that can be accessed through unauthorized applications designed to locate pirated content. Circumvention of smart TVs would also be detrimental to the secure and trustworthy innovative platforms that consumers demand, and which have flourished since the enactment of the Digital Millennium Copyright Act (“DMCA”), even without the proposed exemption. The marketplace for smart TV applications has exploded in recent years. Congress intended the DMCA to protect the right of the developers of such platforms to choose how to design their systems. Granting the proposed exemption would harm the market for and value of copyrighted works. Thus, the proponents have not met either burden of persuasion. *See* Recommendation of the Register of Copyrights, Section 1201 Rulemaking: Fifth Triennial Proceeding, 125, 130, 135 (Oct. 12, 2012) (“2012 Recommendation”)²; *see also* Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control

¹ After the NPRM was issued, “The Exploiters” requested that the proposed class of works be expanded to include “streaming media players,” such as Google Chromecast, Boxee Box and Sony NSZ-GTI. Given that this proposal was not made in response to the initial Notice of Inquiry, it should be rejected. In addition, many of the other ills discussed in the body of this opposition comment will also result from circumvention of streaming media players. Finally, the proponent admits that the Nexus Player is already offered as an unlocked device, so an alternative to circumvention exists. The proponent’s speculation that Google might “rapidly discontinue” that device is not enough to qualify as a likely substantial adverse effect on any noninfringing use.

² All cited materials from previous rulemaking cycles can be accessed via the Copyright Office website at <http://www.copyright.gov/1201/> under “Past Proceedings.”

Technologies; Notice of Inquiry and Request for Petitions, 79 Fed. Reg. 55,687, 55,689 (Sept. 17, 2014) (“2014 NOI”).³

Item 4. Technological Protection Measure(s) and Method(s) of Circumvention

The NPRM describes the access controls at issue as “firmware encryption and administrative access controls that prevent access to the TV’s operating system.” NPRM at 73,868. The initial petition filed by the Software Freedom Conservancy (“Conservancy”) described the access controls at issue as follows: “firmware encryption schemes that prevent the installation of modified firmware files, as well as administrative access controls (such as developer passwords) that prevent the installation of user-supplied applications.” Conservancy Petition (No. 43) at 1. The supporting comment filed by “The Exploiters” states that “[t]he technological protection measures used are often signature checks added to open-source bootloaders (such as U-Boot) to prevent unauthorized software from executing during the boot process. The authorized software is engineered to only accept code from the original manufacturer.” Exploiters Class 20 Comment at 1.

Item 5. Asserted Noninfringing Use(s)

The Register has twice concluded that “a review of the four [fair use] factors leads to the conclusion that making minor alterations in the firmware of an iPhone (or any smartphone) in order to permit independently created software applications to run on the [smartphone] is a fair use.” 2012 Recommendation at 72 (brackets in original). In 2012, the Register stated that she was reiterating this conclusion because “there have not been any significant developments in pertinent case law that would cause the Register to reevaluate the analytical framework applied in 2010.” *Id.* at 74. The Register should not extend these conclusions to the process of circumventing smart TVs.⁴

First, the proponents of the exemption have not described in any detail the process of circumventing access controls used on computer programs resident on smart TVs. Until a detailed record is built, demonstrating specific access controls and methods for defeating them, the proponents have not met their burden.

Second, since the last proceeding, the Federal Circuit decided *Oracle Am., Inc. v. Google, Inc.*, 750 F.3d 1339 (Fed Cir. 2014), which the Joint Creators and Copyright Owners submit should cause the Register to reevaluate her previous analysis. In *Oracle*, the Federal Circuit reversed a district court decision that held that Oracle’s software was uncopyrightable in large

³ The burden of coming forward with evidence in support of the proposed exemption, as well as the burden of persuasion that the exemption should be recognized on the narrow grounds authorized by the statute, must always remain with the proponent of an exemption. 2014 NOI at 55,689. This burden applies to both factual and legal issues.

⁴ To the extent that proposed Class 20 relates to improving the accessibility features on smart TVs, the Joint Creators and Copyright Owners are not necessarily opposed to a limited exemption, if proponents can build a detailed a record and craft a precise, targeted exemption.

part because Google needed to copy the software to interoperate with it. Because the district court’s ruling was largely based on the Ninth Circuit opinions in *Sega Enterprises v. Accolade, Inc.*, 977 F.2d 1510 (9th Cir. 1992) and *Sony Computer Entertainment, Inc. v. Connectix, Corp.*, 203 F.3d 596 (9th Cir. 2000), the Federal Circuit engaged in a careful explanation of those decisions. The court emphasized (i) that these cases do not hold that software is uncopyrightable just because other software developers want to interoperate with it and (ii) those cases were “factually distinguishable” from the *Oracle* case “because the defendants in those cases made intermediate copies to understand the functional aspects of the copyrighted works and then created new products[,]” whereas Google copied Oracle’s code for use in its product rather than merely creating intermediate copies.⁵

Although the court remanded the case to the district court for factual findings on Google’s fair use defense, the case nevertheless calls into question the Register’s reasoning from prior cycles. As the Joint Creators and Copyright Owners argued in the 2012 proceeding, that reasoning deprives software of its rightful status as a fully protectable category of copyrightable works merely because it has some functional elements. By concluding that every copy of a software program, no matter how trivial the differences between the original and the reproduction, qualifies as a fair use simply because it enables interoperability, the Register effectively, if perhaps unintentionally, recognized the “interoperability exception” to copyrightability” that the Federal Circuit rejected in the *Oracle* case.⁶

Item 6. Asserted Adverse Effects

Given that it is undeniable that laptop computers are available that are capable of running whatever applications the proponents would like to develop and run, and that laptops can be connected to television sets such that the output of these applications would be viewable on televisions screens, there is a viable alternative to circumventing smart TVs.⁷ Whereas it would not make sense to connect a laptop to a mobile device like a smartphone or a tablet, there is no reason – at least none proffered by the proponents – why a laptop cannot be connected to a stationary television set.

Item 7. Statutory Factors

17 U.S.C. § 1201(a)(1)(C)(i) instructs the Register to consider “the availability for use of copyrighted works” broadly and in historical context. Access controls have increased, rather than decreased, the availability of software applications designed for use on televisions. In their normal operation, the platforms and devices that smart TV manufacturers and software providers design not only provide software developers and consumers with reliable ecosystems within

⁵ *Oracle*, 750 F.3d at 1369-70.

⁶ *Id.* at 1370.

⁷ See Chris Martin, *How to Connect a Laptop to TV with HDMI and More: Watch Movies and Video from a Laptop on a TV*, PC ADVISOR, Aug. 18, 2014, <http://www.pcadvisor.co.uk/how-to/laptop/3280787/how-connect-laptop-tv-hdmi/>, Exhibit 1 attached hereto.

which to offer innovative new products, but they also prevent application piracy by proactively excluding infringing applications.

This is not only true with respect to applications that themselves are infringing copies of other applications, but also with respect to applications that infringe other types of works, such as movies and television shows. For example, a popular app for enabling infringing access to movies is called “Popcorn Time.”⁸ If a jailbroken smart TV could run such an application, it would render “BitTorrent piracy as easy as Netflix, but with far more content and none of those pesky monthly payments.”⁹ Thus, many smart TV platforms and devices that utilize access controls preserve the “market for and value of” legitimate works.¹⁰ However, when these platforms and devices are “jailbroken” or hacked, piracy is enabled. Given these realities, the Joint Creators and Copyright Owners implore the Register and the Librarian not to grant a jailbreaking exemption for smart TVs.

Item 8. Documentary Evidence

Please see the attached Exhibits.

⁸ See Andy Greenberg, *Inside Popcorn Time, the Piracy Party Hollywood Can't Stop*, WIRED, Mar. 18, 2015, <http://www.wired.com/2015/03/inside-popcorn-time-piracy-party-hollywood-cant-stop/>, Exhibit 2 attached hereto.

⁹ *Id.*

¹⁰ See 17 U.S.C. § 1201(a)(1)(C)(iv).

Index of Exhibits to Joint Creators and Copyright Owners' Class 20 Comment

Exhibit No.	Content	URL (if available)
1	Chris Martin, <i>How to Connect a Laptop to TV with HDMI and More: Watch Movies and Video from a Laptop on a TV</i> , PC Advisor	http://www.pcadvisor.co.uk/how-to/laptop/3280787/how-connect-laptop-tv-hdmi/
2	Andy Greenberg, <i>Inside Popcorn Time, the Piracy Party Hollywood Can't Stop</i> , Wired	http://www.wired.com/2015/03/inside-popcorn-time-piracy-party-hollywood-cant-stop/

Exhibit 1

- [Internet](#)
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How to connect a laptop to TV with HDMI and more: watch movies and video from a laptop on a TV

Everything you need to know to connect a laptop to a TV

By [Chris Martin](#) | PC Advisor | 18 August 14



Connecting your [laptop](#) to your [TV](#) is actually very easy: all you need is the right cable, lead or streaming hardware and you'll be watching content from your laptop on your television in no time. We'll take you through how to connect your laptop to a TV. See all [Laptop tips and tutorials](#).

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You don't have to spend a small fortune to get all the features of the latest smart TVs. One cheap and easy way to get the internet on your TV is to connect it to your laptop. Doing this lets you stream catch-up TV from services such as BBC iPlayer, Sky Go and Netflix through your laptop onto your big TV screen, or even

projector.

What cables do I need to connect my laptop to a TV?

In order to connect your laptop to your TV you are going to need to take a look at what ports are available on both your laptop and TV. This easiest way to connect the two is with an [HDMI cable](#). Unless your laptop is really old, or was a super-budget model, it should have an HDMI output. Virtually all TVs made in the last six years or so also have HDMI ports. (The HDMI port is highlighted in red below.)

Another popular way to connect a laptop to a TV is via a [VGA cable](#) and a 3.5mm audio lead (which connects to your laptop's headphone port) - one cable each for video and sound. Only use this method if one or both of your devices doesn't have an HDMI port. The [VGA port](#) is labeled as PC IN on the image below.



If your laptop has no video output, you can connect your laptop to your TV via an adapter which plugs into your laptop's USB port and provides a VGA output. These cost from around £20.

Connecting wirelessly

If you can't or don't want to have a wire between your laptop and TV, another option is to go wireless. There are various options here depending on your laptop's capabilities since a few laptops have a built-in wireless system called WiDi (Intel Wireless Display) which works with a compatible receiver such as Netgear's Push2TV.

There are also wireless systems which plug into the HDMI port on your TV and laptop (possibly the USB port on your laptop), sending the video wirelessly. These aren't generally cheap, though, and most wireless video systems have a hit on video quality.

A different way to approach the problem is to use a dedicated media streamer such as Western Digital's WDTV, Google's Chromecast (not yet launched in the UK), Roku's Streaming Stick, or even Apple's TV.

The Apple TV is designed to work with your iPad or iPhone, but can also stream video from any computer or NAS running iTunes. It's quite limited as videos have to be one of only a couple of supported file formats. Plus there's no access to BBC iPlayer, Sky Go or other catch-up TV. For more on media streamers, see later in the article.

How to connect a laptop to TV using HDMI

Connecting a laptop to a TV via a HDMI cable is the best and easiest way, as cables are cheap and provide the best quality HD picture and sound. It only requires one lead too, as HDMI handles both video and audio.



To connect a laptop to a TV using a HDMI cable, all you need to do is plug the cable into your laptop and then one of your HDMI ports on your TV. If you're using an up-to-date version of Windows, all that you should need to do is ensure your laptop is switched on, and your TV is set to the correct HDMI channel, the laptop should automatically configure to give you the best settings from here. (See also [How to speed up a slow PC](#))

If for some reason it does not automatically select the right setting, you simply need to go to Control Panel > Display > Adjust Resolution - from here you will see two drop down boxes. The first thing you will need to do is toggle the Display drop down to ensure that your TV is selected, next you need to ensure that the Resolution drop down box matches the settings that are correct for your TV.

1. Turn your laptop and TV on.
2. Connect your HDMI lead to both your TV and laptop (any order).
3. Select the correct [HDMI input](#) on your TV (usually by pressing the AV button).
4. If your laptop does not automatically output its screen to the TV, go to Control Panel > Display > Adjust Resolution and select the TV in the Display drop down box.



How to connect a laptop to a TV using VGA

Another straightforward way to connect your laptop to your TV is by using the VGA port on both devices. This is likely to only be an option for those of you with a laptop that is over 4/5 years old.

VGA is a video lead only, so you will have to accompany this with a 3.5mm audio lead, that you need to connect from the headphone out socket of your laptop to your audio in port of your TV or external speakers.

Using a VGA means Windows should automatically configure the settings like it would if you were using a HDMI cable. However, if you're experiencing difficulties go to Control Panel > Display > Adjust Resolutions and follow the directions above.

1. Turn your laptop and TV on.
2. Connect your VGA cable to both your TV and Laptop (any order).
3. Now do the same with your 3.5mm audio jack – use the headphone out port on the laptop and audio in on your TV or speakers.
4. Go to Control Panel > Display > Adjust Resolution and ensure that TV is selected in Display drop down box.



How to connect a laptop to a TV using USB

Strictly speaking, a USB to USB connection from a laptop to a TV shouldn't work. However, there are several companies that have developed adapters that will convert your USB port to a HDMI out. The only catch here is that you need additional software for your laptop to turn the USB port into a Video out port, so we strongly suggest you check the USB to HDMI adapter you want is compatible with your laptop before you buy.

If the adapter is compatible, then setting up this method is largely straightforward. First of all you need to install the adapter's software/driver, then it's simply a case of running the software and connecting your laptop to your TV.



How to connect your laptop to a TV using USB stick / external hard drive

If you've got a reasonably new TV, then there is a good chance that it will have a USB port. Depending on your TV's capabilities, you might be able to watch video content that is stored on your laptop simply by transferring it to an USB stick / external hard drive and plugging that into the TV.

Providing the video format is supported by the TV (MP4 is almost universally supported), watching content should be as easy as plugging your USB stick / external hard drive into your TV, selecting the USB input and choosing the video you want to watch via the TV's file explorer software.

1. Ensure the video file format is compatible with your TV (you can check this by searching for your TV model on the manufacturers website and checking its specifications).
2. Copy the video file(s) to your USB drive.
3. Insert USB into TV.
4. Select the USB channel on your TV.



5. Use the TV's file explorer to locate and play the desired video.

How to connect your laptop to a TV wirelessly using WD TV Live media streamer

WD TV Live is a media streamer that you plug into the HDMI port of your TV and connects to your home network via its Ethernet port or Wi-Fi. This gizmo lets you play virtually any file including MKV, MP4, XVID, AVI, ISO/VOB and MOV.

All you need to do is connect the WD TV Live to your network and TV and share your laptop's video folder on the network and WD TV Live will do the rest (providing you're using a Plug-and-Play router, which practically all are).

The WD TV Live also turns your telly into a semi-Smart TV as it gives you access to heaps of TV apps, including Netflix, YouTube and Vimeo.

1. Connect your WD TV Live set-top box to your home network via Ethernet or Wi-Fi.
2. Hook up the WD TV Live to your TV with a HDMI Cable.
3. Share the folder – with the videos you wish to watch on your TV – to your home network.
4. Select the HDMI channel that you have plugged in your WD TV Live into.
5. Use the WD file explorer to locate your shared video folder.



- 1.

How to connect your laptop to a TV: brief tutorial

Words: Carrie-Ann Skinner

There are plenty of reasons to connect your [laptop](#) to your [TV](#) so you can view whatever's displayed on the [PC](#)'s screen on your TV. Perhaps you enjoy catching up on TV shows using web-based services. Alternatively maybe you've got a number of video clips and photos stored on your PC that you'd like to see on a big screen. It's a very easy task. Here's how to do it.

Step one

You'll need to start by looking at the ports on both your Television and your [laptop](#). They'll be at least one of the following connections; Composite, S-Video, VGA, [DVI](#), or HDMI port for connecting an external display. However, you'll only be able to use whichever you have a corresponding port on your TV. Check which port your machine has and then connect the second [display](#). It's worth noting if you use S-Video, the audio will continue to be served through the laptop, which is great if your laptop has a good sound system. If not, you'll need a connector that handles [audio](#) too.

Step two




Now you need to configure the settings for the second monitor in Windows. From the Start Menu, select Control Panel and then open the Appearance and Personalization menu. Select Connect an external display from the Display menu. Make sure the display is duplicated on the TV, rather than being used to extend the desktop of your PC.

Step three

From this window you also adjust the resolution for the laptop's display and the TV, as if the resolution and aspect ratio of your TV and laptop don't match, your picture will be distorted. From the Display drop-down menu select the relevant display, and then press the Resolution button. Now use the slider to adjust the resolution. However, it's advisable to use the recommended resolution (which will be identified in your manuals) for each of the displays. Now you can watch content stored on your PC on your TV.



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Exhibit 2

ANDY GREENBERG SECURITY 03.18.15 7:00 AM

INSIDE THE POPCORN TIME, THE PIRACY PARTY HOLLYWOOD CAN'T STOP



 Popcorn Time

Popcorn Time was an instant hit when it launched just over a year ago: The video streaming service made BitTorrent piracy as easy as Netflix, but with far more content and none of those pesky monthly payments. Hollywood quickly intervened, pressuring Popcorn Time's Argentinian developers to walk away from their creation. But anonymous coders soon relaunched the copyright-flouting software. Today, Popcorn Time is growing at a rate that has likely surpassed the on changes designed to make the service virtually impervious to law enforcement.

As Popcorn Time celebrated the first anniversary of its rebirth, WIRED chatted via email and instant message with a software developer from Popcorn-Time.se, one of the most popular of several reincarnations of Popcorn Time. (The anonymous developer asked us to use Popcorn Time's smiling popcorn-box mascot "Pochoclin" as his or her pseudonym.) Popcorn Time's masked spokesperson says the streaming movie and TV app is flourishing—in defiance of many of the world's most powerful copyright holders and EURid, the domain registrar that seized the original site's web domain last year.

After everything we went through, this will be our sweetest revenge.

- ANONYMOUS POPCORN TIME SPOKESPERSON

Popcorn-Time.se, Pochoclin says, has millions of users and is growing at the mind-bending rate of 100,000 downloads per day. He or she also hinted that a forthcoming switch to a peer-to-peer

architecture will make the service far harder for copyright cops to attack. “We’re at the threshold of one of the most exciting times since we started this project,” Pochoclin writes. “Making all our data available via p2p will mean that Popcorn Time will no longer rely on domains and centralized servers but only on its user base.”

“After everything we went through,” Pochoclin said, “this will be our sweetest revenge and our biggest victory.”

When Popcorn-Time.se started responding to WIRED’s questions in November, Pochoclin said the reborn project already had 4 million users. But it had taken a serious hit a few months earlier, when Brussels-based domain registrar EURid revoked its website domain, Time4Popcorn.eu. At its new Swedish domain, it’s only recently returned to that earlier adoption rate. (Pochoclin wouldn’t reveal the size of its current user base for fear of drawing more attention from law enforcement or copyright holders.) “[EURid’s domain seizure] was just a small setback ... a small but painful kick to the balls,” the spokesperson says. “We’ve grown this project tremendously since we picked it up ... The numbers just keep rising.”



A chart of Google searches for Popcorn Time over the last year, showing its quick growth since the shutdown of the original site in March of last year. (Source: Google Trends, which shows only relative search trends rather than absolute numbers of searches.)

For any other year-old startup, those numbers would seem ludicrous. But Popcorn Time is giving away Hollywood’s most valuable content for free, and

making that piracy easier than ever. Download Popcorn Time's app and in seconds you're offered a slick menu of streaming TV shows and movies at least as easy to navigate as Netflix or Hulu—but with higher-quality video and hundreds of recent movies and TV shows paid services don't offer.

Popcorn Time's BitTorrent-for-dummies approach has become the virtually undisputed future of video piracy.

Popcorn Time isn't a new kind of piracy so much as an inviting new front-end interface for the BitTorrent underground. The software collects and organizes popular files from existing BitTorrent sources like the Pirate Bay, Kickass Torrents, Isohunt, and YTS. "We're like Google," Pochoclin says, "scraping for new content all over the internet." By integrating its own video player and prioritizing its downloads from the first chunk of the video file to the last, it makes those sites' files immediately streamable. With Popcorn Time, the complexity of BitTorrent search engines, trackers, clients, seeds, decompression, playback, and storage is reduced to a single click. That's made this BitTorrent-for-dummies the virtually undisputed future of video piracy. Pochoclin says Popcorn-Time.se offers this streaming service pro bono. It doesn't charge for downloads, and neither its app nor its website display ads. "We just did it for the love of this project," Pochoclin writes. "It was something we believed in. And once it started taking off ... as it did from the start, all the love that we were getting from Popcorn Time users made us just keep on going without really stopping to think where this road is taking us."

That road, it seems, points toward a collision course with the Hollywood's copyright lawyers. Documents revealed in last year's Sony hack revealed that the [Motion Picture Association of America](#) boasted of a "major victory" in pressuring Popcorn Time's original developers to scupper the service. The MPAA declined to comment on any measures it's taking against the new Popcorn Time. In a [January 20 letter to shareholders](#), Netflix CEO Reed Hastings wrote that "piracy continues to be one of our biggest competitors," and referred to Popcorn Time by name, calling a graph

showing its rising Google searches “sobering.” Neither Netflix nor Hulu responded to WIRED’s requests for comment.

Pochoclin says the service doesn’t do anything illegal: It merely organizes preexisting BitTorrent files hosted on other sites. “It’s all automated and all working on existing open source technologies and existing websites online. Therefore, it’s legal. Or better ... not illegal,” Pochoclin says. “We all live in a free society, where what is not forbidden is allowed.”

That’s not a defense that’s likely to succeed in an American court. An MPAA spokesperson pointed out in an email to WIRED that previous software like Napster, Grokster, isoHunt, and Limewire didn’t directly host content either, but courts ruled that all of them were infringing on copyrights. Even though it merely helps users stream video files made available elsewhere, Popcorn Time could be accused of “contributory liability,” says University of Richmond intellectual property law professor Jim Gibson. A service whose primary, intended function is aiding copyright infringement doesn’t need to host any files to be illegal. “If they know that they’re actually facilitating the downloading or streaming of copyrighted movies and they continue to do it, they’re in trouble,” Gibson says.

With legal threats looming, Popcorn-Time.se is working on new defenses. In about a month, the group says it plans to launch a version of the app that will update its TV and movie content with the same peer-to-peer BitTorrent protocol that it uses to stream movies, pulling data from other users rather than a central server. That means that even if its domain or other central infrastructure is taken down, Popcorn Time would still function. In a second upcoming phase, Popcorn-Time.se says it will have the ability to update the app itself via peer-to-peer downloads, using cryptographic signatures to ensure no malicious code propagates through its network. When those updates are in place, Pochoclin says, “only our users will decide whether we live or die ... This way, Popcorn Time will be unstoppable.”

But even if the service itself does develop an invincible peer-to-peer architecture, Popcorn Time's developers may be personally vulnerable to a lawsuit or even criminal charges. The Swedish founders of the Pirate Bay, for instance, were [successfully prosecuted for running the massively popular BitTorrent website](#), and the United States is [seeking the extradition of Megaupload founder Kim Dotcom](#) from New Zealand to face criminal copyright infringement charges.

For now, Popcorn Time's developers depend on their unnamed web hosting company to ensure their anonymity, which is hardly a bulletproof strategy. "We're anonymous but not in hiding," Pochoclin says. "We guess our hosting company does know who we are. But they're not supposed to give our information out to anyone. And it's good enough for us."

With Popcorn Time's popularity skyrocketing, it may soon find out whether those defenses are good enough to hold off a horde of MPAA lawyers, too. Pochoclin may be cute. But he's made some powerful enemies.